The VGR
Virtual Ground Resonance System

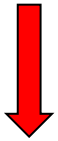
A Brief Overview

Power transferred over miles without wires

This is an exciting technology with the potential to impact the world of power delivery much like cell phones transformed telephone use

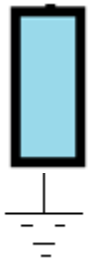
How does it work?

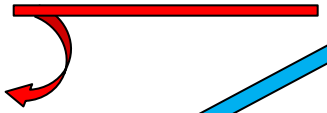
Examples of Various coupled systems



Supply node

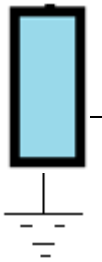
Supply node powered by commercial or some generated power source



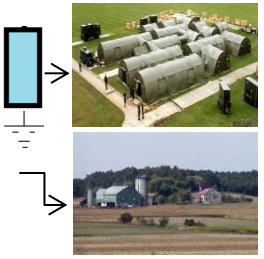


Locked-in and coupled – low loss transfer

Commercial delivery Receive Node supplying neighborhoods



Individual use receivers for remote energy supply



Power is transferred through Virtual Ground Resonance

What else can VGR do?

Tests have been made on a system prototype which shows that digital information (Network) and various analog (such as voice) signals can be sent to each receiver.

This capability expands the meaning of remote power wirelessly. TCP/IP (Internet protocol) hubs can be set up to provide wireless communications to any remote area thus providing power and communications through virtual wires.

How efficient is this system?

Very Efficient!

- The efficiency of the system is 90% – 97% of the power transmitted.
  Aerial coupled efficiency tests show a 50% - 80% efficiency.
- There is no interference with radio or microwave transmission
- The system is not designed to transmit radio waves

How much power and where can it be delivered?

Small units will supply a standard 2200 watts or 20 amps at 110 AC over *20 miles

Larger systems will range from 6000 to 33,000 watts at 220 volts AC up to *250 miles

Industrial systems should, theoretically, deliver kilowatts or megawatts of power anywhere within 10,000 miles

* *Estimated range, actual range to be determined – theoretically the system can deliver power anywhere depending on the transmitter output voltage*

What are some of the applications for this system?

VGR's Potential Uses

- Transferring Power generated from off-shore wind farms to land
- Charging Battery Electric Vehicles while they are on the road or parked
- Powering areal vehicles (manned or unmanned)
- Power for remote villages and towns
- Power for military operations
- Providing power to areas in times of natural disasters
- Farm use (remote area power for pumps and fences and housing)
- Transporting power from dams in remote places to populated areas
- Moving commercial power over distances without HV overhead wires
- Providing wireless internet connectivity to any place in the world.

Smaller applications

- Provide remote power for home owners to run pumps, yard tools, lights for landscaping, etc.
- Boats can receive power in or out of port for various uses
- Camping – power for lights and accessories
- Charging phones, tablets and appliances - anywhere

The VGR power delivery is encrypted so it cannot be covertly received

A special algorithm is applied to the VGR signals that authenticated receivers use to synchronize with the system

Only authorized users are able to get usable power from our system

Conclusion

The VGR uses will grow with need and the creativity of its users.

This technology can change the way we use power.